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**Making sense of double number lines in professional development: exploring teachers' understandings of proportional relationships.**

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Summary: This study presents a qualitative analysis of the knowledge teachers in one professional development course used to reason about proportional relationships with double number lines. We work from the knowledge-in-pieces perspective to consider the existing knowledge the participants did or did not invoke when learning to reason with this new-to-them representation. We analyzed videotaped sessions of a group of urban middle-grade teachers across five class meetings. Our findings include discussion of the two pieces of knowledge that emerged as important for reasoning about proportions with the representation and three knowledge pieces that deterred meaning making. Implications for professional development are discussed as are the implications for conceptualizing teachers' understanding through a knowledge-in-pieces lens.

*Classification:* B50 C39 F39 F49

*Keywords:* middle grades; professional development; proportional reasoning; drawn representations; teacher knowledge

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